

CITY OF NEEDLES
WATER ACCOUNTING
MONTHLY CALCULATION SHEET
CALENDAR YEAR 2023

Diversions - Pumped from Wells	Pumped (Acre-Feet)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Well #8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well #15 (formerly #10)	92.13	89.92	82.87	0.00	96.56	135.78	30.64	150.65	134.02	128.33	106.18	1,047.08
Well #11	0.00	0.00	12.56	106.14	31.93	0.16	128.25	0.00	0.10	0.00	0.00	279.14
Well #12	9.41	13.84	21.54	48.47	57.62	75.32	84.37	44.69	55.16	47.47	30.62	488.51
Sub-Total	101.54	103.76	116.97	154.61	186.11	211.26	243.26	195.34	189.28	175.80	136.80	0.00
Delivered to Ft. Mojave Indian Tribe (AZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delivered to Ft. Mojave Indian Tribe (CA)	2.69	9.44	1.48	2.24	4.92	4.28	3.89	0.85	5.10	1.70	3.53	40.12
Sub-Total	2.69	9.44	1.48	2.24	4.92	4.28	3.89	0.85	5.10	1.70	3.53	40.12
City of Needles' Net Diversion	98.85	94.32	115.49	152.37	181.19	206.98	239.37	194.49	184.18	174.10	133.27	0.00
Uses of Water												
Commercial Accounts	37.22	44.59	52.58	56.44	63.17	60.73	58.28	71.90	57.99	64.54	47.49	614.93
Residential Accounts	30.74	33.32	22.08	43.54	55.30	61.16	83.28	68.53	58.80	55.01	54.45	566.21
Golf Course	9.41	13.84	11.66	48.47	57.62	75.32	84.37	44.69	55.16	47.47	30.62	478.63
Parks, Ballparks, Cemetery	1.80	2.57	2.12	3.92	5.10	9.76	13.43	9.37	12.23	7.08	0.71	68.09
Total	79.17	94.32	88.44	152.37	181.19	206.97	239.36	194.49	184.18	174.10	133.27	0.00
												1,727.86

CALENDAR YEAR 2023
WASTEWATER TREATMENT PLANT

	Mean Flow	# Days	A/F	A/F Return
Jan	0.511	31	48.62	47.16
Feb	0.508	28	43.68	42.37
Mar	0.485	31	46.14	44.76
Apr	0.465	30	42.81	41.53
May	0.501	31	47.67	46.24
Jun	0.482	30	44.38	43.05
Jul	0.495	31	47.10	45.68
Aug	0.486	31	46.24	44.85
Sep	0.503	30	46.31	44.92
Oct	0.455	31	43.29	41.99
Nov	0.451	30	41.52	40.28
Dec		31	0.00	0.00
TOTAL	5.342	365	497.76	482.83

Daily mean flow x #days mo X 1,000,000 = gal/mo
divided by 7.48 divided by 43560 = A/F mo

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Diversions													
Pumped from Wells	Pumped (Acre-Feet)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Well #8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well # 15 (FKA #10)	92.13	89.92	82.87	0.00	96.56	135.78	30.64	150.65	134.02	128.33	106.18	0.00	1,047.08
Well #11	0.00	0.00	12.56	106.14	31.93	0.16	128.25	0.00	0.10	0.00	0.00	0.00	279.14
Well #12	9.41	13.84	21.54	48.47	57.62	75.32	84.37	44.69	55.16	47.47	30.62	0.00	488.51
Sub-Total	101.54	103.76	116.97	154.61	186.11	211.26	243.26	195.34	189.28	175.80	136.80	0.00	1,814.73
Delivered to Ft. Mojave Indian Tribe (AZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delivered to Ft. Mojave Indian Tribe (CA)	2.69	9.44	1.48	2.24	4.92	4.28	3.89	0.85	5.10	1.70	3.53	0.00	40.12
Sub-Total	2.69	9.44	1.48	2.24	4.92	4.28	3.89	0.85	5.10	1.70	3.53	0.00	40.12
City of Needles' Net Diversion	98.85	94.32	115.49	152.37	181.19	206.98	239.37	194.49	184.18	174.10	133.27	0.00	1,774.61

Return and Other Credits													
Measured Returns													
Sewer Plant's Rapid Infiltration Ponds ¹	47.16	42.37	44.76	41.53	46.24	43.05	45.68	44.85	44.92	41.99	40.28	0.00	482.83
Unmeasured Returns													
Percolation from Golf Course ²	0.00	0.00	0.00	27.82	12.94	25.83	37.42	4.70	23.49	30.39	11.96	0.00	174.54
Percolation from Parks ³	0.72	1.03	0.85	1.57	2.04	3.90	5.37	3.75	4.89	2.83	0.28	0.00	27.24
Percolation from Large Commercial Users ⁴	0.89	1.07	1.26	1.35	1.52	1.46	1.40	1.73	1.39	1.55	1.14	0.00	14.76
System Losses ⁵	19.68	0.00	27.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	46.75
Septic Tank Returns ⁶	4.12	3.84	4.41	4.22	4.12	3.96	4.54	4.48	4.16	4.16	3.98	0.00	46.01
Total Unmeasured Returns	25.41	5.94	33.57	34.96	20.61	35.16	48.74	14.66	33.94	38.93	17.36	0.00	309.29
Total Returns	72.57	48.31	78.33	76.49	66.85	78.21	94.42	59.51	78.86	80.92	57.64	0.00	792.12

Footnotes:

- 1/Calculated as WWTP Total Discharge*0.97.
- 2/Calculated as Monthly Delivery to Golf Course*Efficiency-Monthly ET. Efficiency =0.9
- 3/Calculated as Delivery to Parks, Ballparks, Cemetery*0.40.
- 4/Calculated as 24% of Deliveries to Commercial Accounts*0.10.
- 5/Calculated as City of Needles' Net Diversions-Total Uses.
- 6/Total Annual UMRF from septic tanks = 50; assumes 210 septic units*0.6 AF/y*0.40 (where 0.40 = UMRF Factor). Annual volume is distributed monthly using a monthly distribution factor.

Consumptive Use													
Diversion	98.85	94.32	115.49	152.37	181.19	206.98	239.37	194.49	184.18	174.10	133.27	0.00	1,774.61
Measured Returns	47.16	42.37	44.76	41.53	46.24	43.05	45.68	44.85	44.92	41.99	40.28	0.00	482.83
Unmeasured Returns	25.41	5.94	33.57	34.96	20.61	35.16	48.74	14.66	33.94	38.93	17.36	0.00	309.29
Consumptive Use	26.28	46.01	37.16	75.88	114.34	128.77	144.95	134.98	105.32	93.18	75.63	0.00	982.49